The Pro for your Tools

Your workstation may be perfect for editing, mixing and synchronizing audio, video and MIDI. But what about the final touch, the elements that turn good into great - the creation of a real masterpiece?

System 6000 is a dedicated system, designed specifically to put the finishing touches on your sound. Whether you're mixing music, designing sound effects for feature films or mastering the latest high resolution DVD, System 6000 is your guarantee. TC Electronic has invested over 30 man-years in research and development to bring you the tools you need. System 6000 brings you dedicated tools which provide the highest audio quality, with the lowest production time and the opportunity to turn every piece into a masterpiece.

May '04. Item No: 611010398

System6000 Users

17 Grand Recording • 20th Century Fox • 5.1 Entertainment • Advanced Audio • Air Studios, UK • Al Schmitt • Andre Gauthier (Pilot Music) • B&K Productions • Battery Mastering • BBC Resources • Bernie Becker • Berwyn Editorial • Blink Music • Blue Rock Editorial • Bob Ludwig (Gateway Mastering) • Brant Biles (Mi Casa Studios) • Brian Tankersly • Brooklyn Recording • Bruce Botnick • CBC Records • Chuck Ainlay • Clair Bros. • Classic Sounds Inc. • Clear Light • Cliff Schwartz Music • Crest National Video • Danny & Tommy Vicari • David Frangioni (Audio One) • David Tickle • De Lane Lea, UK • Design FX • Diginote Studios • Digital Edit Services • Digital Music Technologies • Dolby Labs • FM Productions • Future Disc • George Massenburg • Grand Central Studios, UK • Howard Schwartz • Kampo Audio Video • Ken Margolis Productions • LA Effects • Loud Studios • Mastermind Metropolis, UK • Michael Wagener • Mondophonics • Nathaniel Kunkel • Pacific Ocean Post • Pharoah Editorial • Photomag Studios • Pomann Sound • Precision Mastering • Richard Fairbanks • Rock Villa • Ross Pallone • Rudy Perez (Bullseye) • San Francisco Symphony • Scott Fafrak • Skywalker • Sony Music • Sony Pictures • Sound Chamber • Sound Matters • Sound One • Soundeluxe • Steve Porcaro • Steve Power, (Robbie Williams) • Stubblebine Mastering • Studio C • Sync Sound • Ted Curtis • The Body Inc • The Mouse • TODD-AO • Univibe Studios • Video Post & Transfer • Warner Bros. • Willy Chirino (Zarabanda Studios) • Worldlink Digital • Yello Music • *and more... just visit tcelectronic.com*

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SYSTEM 6000

Ultimate Multichannel Processing Platform



REVERB 6000 MASTERING 6000

System 6000 has been designed to bring unquestionable processing quality to your film or music project, whether you're working with a large scale console or a digital audio workstation. Read on to learn more about how System 6000 can be customized to become the production and mastering toolbox you've always wanted.

t.c. electronic
ULTIMATE SOUND MACHINES

TEC WINNER

SYSTEM 6000 Ultimate Multichannel Processing Platform – An Industry Milestone

While System 6000 won the prestigious TEC award in the year 2000, its software and processing capabilities have developed immensely since then - a development path offering System 6000 users a wealth of free additions and new license possibilities.

With such a pool of additional processing to choose from, System 6000 today offers two distinctively different entry points: Reverb 6000 and Mastering 6000. Naturally, Reverb 6000 and Mastering 6000 can both be expanded with optional algorithms, retaining the well known license-based structure.

Multiple Mastering 6000 and Reverb 6000 units can be connected on a network, creating a huge pool of processing power - all available at one place or shared between rooms. How the lines are drawn can be changed at the push of a button, allowing resources to always reflect the needs of the moment. The ease of control will be apparent when using the TC Icon Remote or its software equivalents for Mac or PC. The System 6000 is fully compliant with networking, sharing of processing resources and time code automation or built in workstation automation.

The System 6000 family do not only provide the best possible environment and routing for the algorithms running internally, they also improve surrounding equipment by safeguarding overall studio timing, and by reporting even the slightest problem in digital interfacing, instead of ignoring slips and glitches that might not be heard at first.

System 6000 Entry Points

Tools	Reverb 6000	Mastering 6000
Stereo Reverbs	Included	Not included
Multichannel Reverbs	Included	Not included
Stereo Delay	Included	Not included
Multichannel Delay	Included	Not included
Stereo Mastering	Not included	Included
Multichannel Mastering	Not included	Included
Monitor Matrix	Not included	Included
VariPitch	Included	Included
UnWrap	Not included	Not included
BackDrop	Not included	Not included
MDW HiRes EQ™	Not included	Not included

Included ● *Not included. Optional License required* ●

MASTERING 6000 – Turn a Master into a Masterpiece

Mastering 6000 is packed with a choice selection of precision tools for multiple mono, stereo and multichannel processing. Up to four different Engines may be used simultaneously, for instance four 5.1 dynamics processors, two stereo and two 5.1, or any other combination you like. New limiting and compression algorithms make their debut with the introduction of Mastering 6000, while all of the legendary processing from Reverb 6000 and optional licenses can be purchased or leased as required.

REVERB 6000 – Halls of Fame

Containing the entire Reverb palette develeoped by TC Electronic, Reverb 6000 is a four engine Reverb monster. It delivers the finest, wildest and most research-intensive spatial effects found in the audio industry today. Reverb 6000's impeccable timing and resolution is simply in a league that sets it apart from any previous Reverb in history. It features award winning VSS reverbs, effect reverbs, wild delay and boundary effects for mono, stereo, LtRt, 5.1 and 6.1 formats, plus the best algorithms and presets from the classic M5000. All of the excellent algorithms from Mastering 6000 and other optional licenses can be bought or rented if required.



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Film & Post Production

With more than 300 built-in Film-and Post production presets, Reverb 6000 offers the most extensive reverb and room simulation collection in the business.

Thanks to the processing and memory access capabilities of Reverb 6000, presets with distinct characteristics are offered alongside easy to use, generic sustain reverb effects. Therefore, credible and quickly adjustable simulations are a part of the package, covering anything from claustrophobic boxes to gigantic outdoor environments. To further spark the creativity of its user, Reverb 6000 also comes with new algorithms going beyond simulations to the land of twisted and funky effects.

Reverb 6000 includes award-winning VSS and Reflector algorithms at their highest resolution and density for just about any format: Mono, mono to stereo, stereo to stereo, matrixed surround, and 5.1 or 6.1. Delay and boundary effects can also be put in a 3-channel mode (LCR). One Reverb 6000 can simultaneously run 16 mono Reverbs, four times stereo, two times 6.1 or combinations of those and other formats.

Reverb 6000 in Film & Post Production

6.1 Reverb
Provide the ultimate spatial engagement of a cinema audience using the 6.1 reverb with 3 front plus 3 surround channels. Reverb 6000 is an industry first.

Credible Environments
Extravagant reflection rendering delivers the most convincing and controllable spaces available. From claustrophobic boxes to big outdoor scenarios.

16 Mono Reverbs
16 independent mono Reverbs to cover arbitrary surround formats, and situations where bleed between Reverb return channels has to be prevented.

Wild Reflections
Advanced Delays and boundary effects for mono, stereo, LCR, 5.1 and 6.1 formats. Reflector will forever change the way you look at Delay and Diffusion.

Skywalker Sound Collection
Reverb 6000 contains a compilation of first class Reverb and Room Simulation presets from one of the most respected post production houses in the world.

SKYWALKER SOUND
A Division of Lucas Digital Ltd.

Music Production

Reverb 6000 comes with more than 300 built-in presets for music production. It further refines TC's idea of Reverb being more than a pleasing sustain effect; which is why you are not only offered stereo-in to stereo-out or 5.1-in to 5.1-out, but also Source based implementations of the algorithms. The Source based versions, instead take in e.g. 2 or 4 discrete mono sources and deliver a stereo or 5.1 rendering. Source based simulation makes it possible for a listener to identify and differentiate between sources in a mix based upon subtle reflection cues, like a good microphone pick-up of a live performance, instead of adding the same Reverb soup to many elements of a mix. The Source concept is true stereo, or whatever format you have chosen to work in.

Adding to the award-winning VSS algorithms, Reverb 6000 also contains several new effect reverbs, some of which provide desirable and still sought after flavors from the past. Early generations of digital reverbs became famous as effects rather than for room simulations. Interesting combinations of dense, chorused Reverb or highly unnatural envelope responses spring to mind. The algorithms in Reverb 6000 can do it the way the ancestors did, including resolution, noise and texture, and can even be put in a hi-res mode. New functions have also been added to enable more wacky effects, should plain vanilla oldies not be what the user is after.

Halls of Fame

Find out how the latest reverb technology is used by the music industry's top-notch producers and engineers. Halls of Fame is an unprecedented assembly of creativity in one, valuable preset bank, containing nothing but the best from pros such as Michael Bishop, Akira Fukada, Bob Katz, George Massenburg, Al Schmitt and many more.

Reverb 6000 in Music Production

Source Reverb
Use Source based Reverb to create spatial sensation. Subtle position cues support localization and enables easy discrimination between instruments.

True Stereo
Covering all formats from mono to 6.1, true stereo Reverbs are available in several flavors: From naturalistic source types to traditional sustain versions.

Massive Delay
High resolution Delays: 2290 users prepare yourself for the next step. More control, more time, more formats, more wacky.

Old Classics
Now also available: Sought after flavors from the past like sweet, chorused Reverb and highly unnatural envelope responses.

"The 6000 allows me to move my sound effects from small caves to exterior wide expanses with startling realism"
Christopher Boyes
Recording Mixer, Sound Designer

"Having experimented with the latest algorithms, I feel the 6000 has what it takes to become the industry standard for 5.1 reverberation"
John Kurlander
Scoring Mixer

"These days I don't go anywhere without it!. I just used it on records for Barbra Streisand, Diana Krall and Patti Austin, there's no doubt about it: the System 6000 simply has the best reverbs around"
Al Schmitt
Producer/Engineer

"Since I've integrated the 6000 into my studio, I find I use other reverbs/processors less and less. Not only does it emulate other reverbs convincingly, on it's own it opens up a world of new possibilities. The reverbs are more detailed and subtle. The 5.1 reverbs are dramatic and are already completely indispensable"
George Massenburg
Engineer, Producer

Mastering

For Music and Film mastering, no compromise tools are needed to allow adjustment and quality check in one real-time pass. Mastering 6000 has this capacity, and also acts as a jitter-immune anchor, improving the performance of work stations and other equipment in the studio. The small yet powerful Icon remote constitutes an unobtrusive user interface ideal for controlling processing as well as monitors for multiple formats.

If digital inputs and outputs are not enough, add optional analog I/O cards that rival the best stand-alone converters available. Converter scaling is done in the analog domain, with a superior resolution equivalent to an optical zoom on a digital camera, and gold plated relays configure the outputs for balanced or unbalanced operation as desired. On the input side, extremely hot analog levels can be converted at pristine resolution, and custom filtered to optimize impulse response and minimize alias distortion.

Included processing

Mastering 6000 includes MD4, a new five-band dynamics processor for stereo signals which features a 48 bit signal path with phase-linear split filter response, and the ability to indvidually multiband process the M and S part of the signal. An upgraded version of the acclaimed BrickWall Limiter uses 5 times internal upsampling for tight peak control to combat distortion and listening fatigue. No matter if distribution is based on CD, DSD, MP3 or other data reduced formats, the BrickWall Limiter leaves the signal completely untouched when levels are below the limiting threshold.

Mastering 6000 also comes with MD3 and MD5.1, three-band, 48 bit expander/compressor/limiters for stereo and multichannel signals. MD5.1 processors can be combined to process for instance 6.1, 7.1 or 10.2 sources.
To complete the picture, a multichannel Monitor Matrix is included for confidence check, format conversion, time alignment, speaker calibration and bass management.

Optional licenses

As a matter of course, Reverbs and other optional licenses from the System 6000 pool of processing may be rented or acquired.

Stereo Mastering (Included)

MD3 and MD4 featuring up to five-band processing on stereo signals in the LR or MS domain. BrickWall Limiter uses internal upsampling for ultimate peak control, and consequently prevents listening fatigue.

UnWrap (Optional)

High resolution conversion of stereo to 5.1. Processing options allow the user to respectfully bring out the intentions of an original mix.

Multichannel Mastering (Included)

MD5.1 multichannel limiter including multiband compressor/expander with flexible steering and sidechain configuration. Audio may even be multi-band controlled based on a 7th channel external input.

BackDrop (Optional)

A benchmark for perception-based noise reduction among audio professionals. In real-time, BackDrop removes Broadband and Cyclic noise such as hiss, room, reverb, hum, air con etc. on mono and stereo material.

Monitor Matrix (Included)

Essential monitoring and calibration tools for stereo and multichannel signals. Including Downmix, Bass Management, Time align, 90 degree mono generation, Mute and Solo functions.

MDW HiRes Eq (Optional)

The pristine George Massenburg EQ in a pristine environment. 5-band EQ using double rate processing to combat alias distortion and mimic analog EQ behavior.

"The instant I heard about the System 6000 I begged for one of the very first units and it has been used on every single PCM surround project I have done since! The 5.1 monitor matrix is indispensable for muting and soloing channels. Bass Management is a major consideration in all 5.1 projects and the System 6000 offers many tools for this. The System 6000 is one of the few Reverb systems that reverberates all five channels instead of four at 96kHz. The 6- channel compression continues in the TC Electronic tradition of the Finializer by offering that same kind of sound for surround projects with the Sidechains nicely managed. The EQ is very flexible. The possibilities for noise reduction, and 5.1 to stereo reductions or stereo to 5.1 expansions, binaural matrixes ...the list goes on and on. I couldn't imagine being without my System 6000. I'm sure I'll be getting more of them as it continues to become more and more indispensable!"

Bob Ludwig - Mastering Engineer
(8 time TEC Award Winner for Mastering Engineer Gateway Mastering - Portland, Maine)

Technical Specifications

Networking facilities

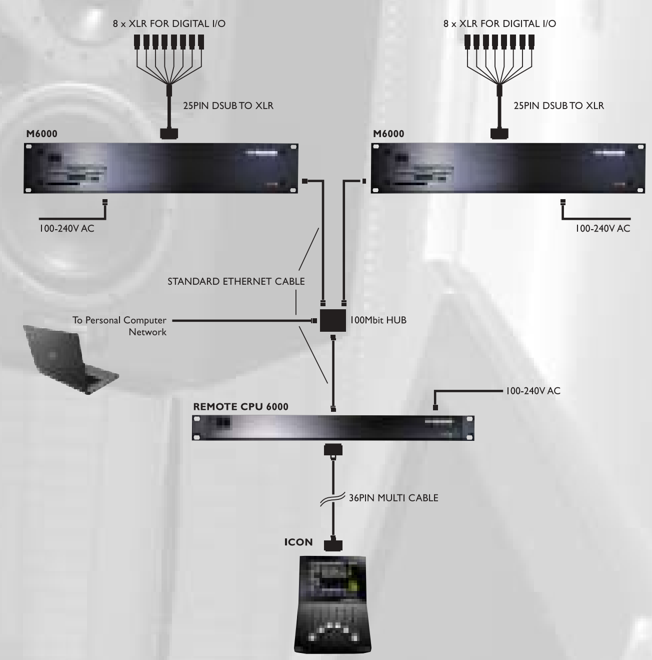
With the 6000 family you can connect multiple Mainframes with up to ten TC Icons and Mac/PC editors. For instance, keep your Mainframe in the machine room and have a number of TC Icons in different locations, or have one TC Icon or Icon-editor to control a number of Mainframes. The communication between Mainframes and Icons/computers are running standard TCP/IP-protocol, and therefore integrates into existing standard networks.

User Interface

Although the TC Icon's full color touch screen is an integral part of the 6000 user interface, computer keyboard, mouse and an external VGA screen output are also featured to really adapt to your set-up and working style.
Mac and PC Editors with similar functionality as TC Icon are available as alternative control interfaces.

TC Icon & Remote CPU 6000

TC Icon	
Connection:	Proprietary TC cable between Remote CPU and TC Icon 7,5 m / 22 feet maximum length
Display Type:	6,5" TFT active matrix color LCD display, 640 x 480 pixels resolution. High luminance (300 cd/m2, typ.)
Touch Screen:	Resistive, 20 gram activation force
Faders:	Six (6), 90 mm motorized with touch sensitivity
Dimensions:	D: 279 mm W: 198 mm Hfront: 33 mm Hback: 100 mm
Weight:	5,56 lb (2,51 kg)
Remote CPU	
Operating System:	Windows NT embedded version 1.0
Ethernet Interface:	10/100 Mbits/s, Base-T, IEEE 802,3 pico protocol compatible. RJ-45 type connector
USB Interface:	Two Universal Serial Bus ports, USB 1.0 compliant
Keyboard/Mouse:	Mini-DIN connector supports standard PC/AT keyboard and a PS/2 mouse.
Dimensions:	1,75" x 19" x 8,2" inches (483 x 44 x 195 mm)
Weight:	4,7 lb. (2,13 kg)
Mains Voltage:	100 to 240 VAC, 50 to 60 Hz (auto-select)
Power Consumption:	50 watts



Mainframe 6000

Digital Inputs and Outputs	
Connectors:	D-SUB, 25 pole (8 channels AES/EBU in/out)
Formats:	AES/EBU (24 bit)
Word Clock Input:	BNC, 75 Ohm or Hi-Z, 0.6 to 10 Vpp
Internal Sample Rate:	96 kHz, 88.2 kHz, 48.0 kHz, 44.1 kHz
Internal Clock Precision:	+/- 30 ppm
Jitterrejection at External Sample Rates:	30 to 34 kHz, 42.5 to 45.5 kHz, 46.5 to 48.5 kHz, 85 to 91 kHz and 93 to 97 kHz.
Rejection Filter (4'th order):	< -3 dB @ 50 Hz < -65 dB @ 500 Hz < -100 dB @ 1.4 kHz
Rejection Filter Peak (jitter gain):	< 1 dB @ 2 Hz
Intrinsic Interface Jitter:	< 1 ns peak, BW : 700 Hz to 100 kHz
Digital Output Phase:	< 3 % of sample period
Input variation before Sample Slip:	+27 % / -73 % of sample period
Output Dither:	HPF/TPDF dither 8-24 bit, mono, stereo, inverted
Processing Delay:	0.15 ms + 0.21 ms per engine @ 48 kHz, 0.07 ms + 0.1 ms per engine @ 96 kHz
Frequency Response DIO:	DC to 23,9 kHz +- 0,01 dB @ 48 kHz, DC to 47.9 kHz +- 0.01 dB @ 96 kHz
PCMCIA Interface	
Connector:	PC Card, 68 pin type 1 cards
Standards:	PCMCIA 2.0, JEIDA 4.0
Floppy Drive:	DOS compatible, 3 1/2", 1.44 Mb
Control Interface	
MIDI:	In/Out/Thru: 5 Pin DIN
GPI, Pedal, Fader:	Phone jack, 0 ohm to 50 kohm
Remote:	Custom MIDI In & Out
SMPTE:	Input for Cuelist Management
Ethernet:	10/100 Mbits/s, Base-T
General	
Dimensions:	3 1/2 x 19 x 12 inches
Weight:	19 lbs. (8.6 kg)
Mains Voltage:	100 to 240 VAC, 50 to 60 Hz (auto-select)
Power Consumption:	45 watts
Warranty	
Parts and Labor:	1 year

ADA 24/96 Analog I/O

Analog Input	
Selectable Full Scale Input level:	6, 12, 18, 24, 30 dBu
Dynamic Range:	> 113 dB (unweighted), BW: 20-20 kHz
THD+N:	< -105 dB @ 1 kHz, -3 dBFS
Crosstalk:	< -120 dB, 20 Hz to 20 kHz
CMRR (A-In: 24 dBu, Rs: 2 x 20 ohm):	> 80 dB @ 50/60 Hz & > 90 dB @ 1 kHz
A to D Conversion:	24 bit (Dual bit delta sigma sampling at 4.1/5.6/6.1/6.1 MHz)
Analog Output	
Selectable Full Scale Output level:	6/0, 12/6, 18/12, 24/18 dBu (Balanced/unbalanced)
Dynamic Range (A-Out: 18, 24 dBu):	> 113 dB (unweighted), BW: 20-20 kHz
THD+N:	< -95 dB @ 1 kHz, -3 dBFS
Crosstalk:	< -110 dB, 20 Hz to 20 kHz
D to A Conversion:	24 bit (Multi-bit delta sigma sampling at 4.1/5.6/6.1/6.1 MHz)
Selectable Sample Conversion Filters	
In/Out Sample Rate 32/96 kHz:	Fixed filter
In/Out Sample Rate 44.1/48 kHz:	Filter choices: Linear, Natural, Vintage, Bright & Standard